

**Space Science Seminar
Tuesday, 2015 July 21
10:30 a.m.
NSSTC/2096**

**Energy Transfer in the Earth's Magnetosphere:
The Role of Magnetic Reconnection**

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Host: Dr. Jim Spann

Magnetic reconnection is arguably the most important driver of dynamical evolution in magnetospheres. Magnetic reconnection facilitates energy transfer from the external solar wind into magnetospheres, and it plays a key role in the conversion and dissipation of this energy inside of magnetospheres. Typically, plasma conditions vary where reconnection operates, but even more so between different reconnection sites. Because of the fundamental role reconnection plays in the overall dynamics, it is of interest to understand its modes of operation under different physical conditions. In this presentation, we present a combined review and analysis of the present knowledge pertaining to this question. We will focus on issues such as rate dependence on external parameters, and whether reconnection operates in a steady or unsteady fashion, and we will investigate the onset of magnetic reconnection in current layers, which are threaded by a normal magnetic-field component. The presentation will focus on results from both theory and modeling, but present linkages to observed features of reconnection in and around the magnetosphere.

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